

CLAIMS:

1. A vehicle, comprising:
 - an actuator;
 - a steering shaft configured to transmit a steering angle of a steering wheel; and
 - a damper positioned at the steering shaft to absorb vibration caused by the actuator.

2. The vehicle according to Claim 1, wherein the actuator comprises:
 - a housing;
 - an input shaft configured to rotate with the housing and connected at the steering shaft;
 - a motor fixed at the housing;
 - an output shaft positioned at the housing and configured to transmit the steering angle to ground wheels; and
 - a gear mechanism configured to adjust a rotational angle of a shaft of the motor and to output the adjusted rotational angle to the output shaft.

3. The vehicle according to Claim 1, further comprising:
 - a flexible coupling configured to connect the input shaft and the steering shaft,
 - wherein the damper is positioned at the flexible coupling.

4. The vehicle according to Claim 3, wherein the flexible coupling comprises:
 - a first yoke fixed at the steering shaft;
 - a coupling main body including an elastic member and fixed to the first yoke by a first fastener extending along an axis of the first yoke; and

a second yoke fixed at the coupling main body by a second fastener extending along an axis of the second yoke and fixed at the input shaft,

wherein the damper is fixed to the first yoke by the first fastener.

5. The vehicle according to Claim 4, wherein at least one of the first and second fasteners includes a bolt.

6. The vehicle according to Claim 4, wherein the coupling main body is composed at least in part of a rubber.

7. The vehicle according to Claim 1, wherein the damper is composed at least in part of a metal.

8. A transfer ratio varying apparatus, comprising:

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a steering shaft configured to transmit a steering angle of a steering wheel;

an actuator connected to the steering shaft, the actuator comprising,

a housing,

an input shaft configured to integrally rotate with the housing and connected to the steering shaft,

a motor fixed at the housing and including a rotatable shaft,

an output shaft supported at the housing and configured to transmit an angle to a wheel assembly, and

a gear mechanism between the rotatable shaft and the output shaft at the housing, configured to adjust a rotational angle of the rotatable shaft and to output the adjusted rotational angle to the output shaft; and

a damper disposed between the input shaft and the steering shaft and configured to absorb vibration caused by the actuator.

9. The transfer ratio varying apparatus according to Claim 8, further comprising:
a flexible coupling configured to connect the input shaft of the actuator and the steering shaft,
wherein the damper is positioned at the flexible coupling.

10. The transfer ratio varying apparatus according to claim 9, wherein the flexible coupling comprises:
a first yoke fixed at the steering shaft and defining a maximum outer diameter of the flexible coupling;
a coupling main body including at least an elastic member being elastic in a radial direction thereof and fixed with the first yoke by a first fastener extending along an axis of the first yoke; and
a second yoke fixed with the coupling main body by a second fastener extending along an axis of the second yoke and fixed to the input shaft,
wherein the damper is fixed to the first yoke by the first fastener.

11. The transfer ratio varying apparatus according to Claim 10, wherein the coupling main body is made at least in part of rubber.

12. The transfer ratio varying apparatus according to Claim 10, wherein at least one of the first fastener and the second fastener includes a bolt.

13. The transfer ratio varying apparatus according to Claim 8, wherein the damper is made at least in part of a metal having a constant mass.

14. A vehicle, comprising:

means for actuating;

means for transmitting a steering angle of a steering wheel; and

means for damping, positioned at the means for transmitting to absorb vibration

caused by the means for actuating.

15. The vehicle according to Claim 14, wherein the means for actuating comprises:

a housing;

an input shaft configured to rotate with the housing and connected at the steering shaft;

a motor fixed at the housing;

an output shaft positioned at the housing and configured to transmit the steering angle to ground wheels; and

a gear mechanism configured to adjust a rotational angle of a shaft of the motor and to output the adjusted rotational angle to the output shaft.

16. The vehicle according to Claim 14, further comprising:

means for flexibly coupling connecting the input shaft and the means for transmitting,

wherein the means for damping is positioned at the means for flexibly coupling.

17. The vehicle according to Claim 16, wherein the means for flexibly coupling comprises:

a first yoke fixed at the means for transmitting;

a coupling main body including an elastic member and fixed to the first yoke by a first means for fastening extending along an axis of the first yoke; and

a second yoke fixed at the coupling main body by a second means for fastening extending along an axis of the second yoke and fixed at the input shaft,

wherein the means for damping is fixed to the first yoke by the first means for fastening.

18. The vehicle according to Claim 17, wherein at least one of the first and second means for fastening includes a bolt.

19. The vehicle according to Claim 17, wherein the coupling main body is composed at least in part of a rubber.

20. The vehicle according to Claim 14, wherein the means for damping is composed at least in part of a metal.